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Science and Technology for Tomorrow's Air and Space Force

Success Story

DIRECTED ENERGY DIRECTORATE SCIENTIST RECEIVES DISTINGUISHED CIVILIAN SERVICE AWARD

Dr. R. Russell Butts, of the Directed Energy Directorate's Airborne Laser Technology Branch, received the Department of Defense (DoD) Distinguished Civilian Service Award for exemplary public service in leading the development of laser beam control technologies. The award is the highest given to career civilian employees by the Secretary of Defense for exceptional duty and extremely significant contributions in science, technology, or administrative fields that increased efficiency, economy, or improvement within the DoD.

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Accomplishment

Dr. Butts' research team developed crucial Airborne Laser (ABL) technologies that will enhance America's missile defense capabilities. He directed his team to validate beam control capabilities corresponding to the "speed of light" destruction of ballistic missiles in the boost phase.

Dr. Butts joins two other directorate scientists who received this award over the past four years. In 1999, Dr. William L. Baker, the directorate's chief scientist, and in 1997, Dr. Robert Q. Fugate, a senior scientist for atmospheric compensation, each received this honor.

Background

As principal investigator of advanced ABL beam control techniques, Dr. Butts' team conducted two major congressionally-mandated laser beam control demonstrations in direct support of the $1.3B ABL acquisition program. These demonstrations conclusively validated ABL laser beam control performance at required design points.

The Secretary of the Air Force certified the ABL acquisition program before Congress in 1999 based on the beam control demonstration performed by Dr. Butts' team. The success of the beam control demonstration played a key role in the restoration of ABL program fiscal year 2001 funding.

In order to counter the effects of turbulence on the ABL laser beam, Dr. Butts directed his team to conduct two major ground-to-air demonstrations to verify the ABL system could pre-shape the beam for effective propagation. Under his guidance, the ABL team demonstrated the system could attain up to a six-fold increase in energy on target as compared to performance without atmospheric correction.

Dr. Butts' team successfully demonstrated effective laser beam correction for atmospheric turbulence. The extensive efforts of Dr. Butts significantly impacted the revolution in directed energy weapons, assuring asymmetric superiority over potential adversaries.

Directed Energy
Awards and Recognition

Additional information

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